

REMARKS

Administrative Overview

Claims 33-60 are pending in this application, prior to entry of this paper. The Office action of March 10, 2006, has withdrawn certain claims as being drawn to non-elected subject matter, and has rejected the remaining claims.

On page 3, the Office action states that claims 35, 36, 37, 39, and 50 are withdrawn; however, the Summary page lists "34-39, 46, 47, 49, and 50" as withdrawn. Applicants address the restriction requirements as follows, to clarify this point.

There are four species restrictions requiring an election of: (I) either claim 34 or 35; (II) one of claims 36-39; (III) either claim 46 or 47; and (IV) either claim 49 or 50. Applicants make the following elections:

- (I) Applicants elect claim 34, withdraw claim 35;
- (II) Applicants elect claim 38, withdraw claims 36, 37, and 39;
- (III) Applicants elect claim 46, withdraw claim 47; and
- (IV) Applicants elect claim 49, withdraw claim 50.

As a result of the above elections, claims 35, 36, 37, 39, 47, and 50 are withdrawn. Applicants' election of claim 38 is made with traverse, for reasons which are made clear in the remarks below, and by dint of the amendment of claim 33. Applicants request the reinstatement and consideration of claims 36, 37, and 39 in this application. Applicants also reserve the right to pursue any non-elected claim(s) in one or more divisional/continuation applications. Applicants cancel without prejudice non-elected claims 35, 47, and 50.

Without acquiescing to any rejection, Applicants also cancel without prejudice claims 40, 41, 44, 45, 51-53, and 57-58; and Applicants add new claims 61-71. As a result, claims 33, 34, 36-39, 42, 43, 46, 48, 49, 54-56, and 59-71 will be pending upon entry of this paper (of these, claims 36, 37, and 39 stand as withdrawn, but pending). Support for the new claims is present in the application as originally-filed, as explained below. No new matter is added thereby.

Applicants amend claims 33, 34, 36, 37, 38, 39, 42, 43, 49, 54, 55, 56, and 59 as reflected in the Listing of Claims above. Support for these amendments and for new claims 61-71 is present in the application as originally filed, for example, as indicated in the chart below. No new matter is added.

<u>Claim number</u>	<u>Examples of support for amended claim/new claim in application as originally-filed</u>
33	Page 5, lines 5-9; page 6, lines 20-22; page 14, lines 1-6; page 58, lines 10-12; page 63, lines 12-18
34	(amended for form in light of amendment of claim 33)
36	(amended for form in light of amendment of claim 33)
37	(amended for form in light of amendment of claim 33)
38	(amended for form in light of amendment of claim 33)
39	(amended for form in light of amendment of claim 33)
42	Fig. 3; page 6, lines 20-22; page 13, lines 7-9
43	Fig. 3; page 6, lines 20-22; page 13, lines 7-9
49	(amended for form in light of amendment of claim 33)
54	(amended for form in light of amendment of claim 33)
55	Page 46, lines 12-13
56	Page 47, lines 3-7
59	(amended for form)
61	(based on previous claim 44, rewritten to depend from claim 48 in light of amendment of claim 33)
62	(based on previous claim 45, rewritten to depend from claim 48 in light of amendment of claim 33)
63	Page 16, lines 7-9
64	Page 63, lines 12-18
65	Fig. 3; page 6, lines 20-22; page 13, lines 7-9
66	Page 1, line 15
67	Page 29, lines 5-6
68	Page 14, lines 16-18
69	Page 14, lines 16-18
70	Page 16, line 5; page 58, lines 13-19
71	Fig. 2, references 202, 210, 212, 218, and 234 (also, see support for claim 33)

The drawings satisfy 37 CFR 1.83(a)

The Office action objects to the drawings under 37 CFR 1.83(a), alleging that the feature “compensation map” is missing from the drawings. The objection is reproduced as follows:

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the compensation map and alignment of the feature present must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The "compensation map" was an element of claim 40, which is canceled without prejudice, as reflected in the Listing of Claims. This renders as moot the objection under 37 CFR 1.83(a). Applicants respectfully request the withdrawal of this objection to the Drawings.

The claims satisfy 35 USC 112, second paragraph

The Office action rejects claims 33-60 under 35 USC 112, second paragraph, as allegedly being "indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention." Claim 33-60 are also rejected under 35 USC 112 as allegedly being "incomplete for omitting essential steps". The 35 USC 112 rejections are reproduced below:

5. Claims 33-60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 20, the terms "correlating" and "correlate" are unclear. How are the images correlated? Are mathematical comparisons made between the images? If so, what is the calculation? Upon what is the correlation based? What is being compared? Please provide a definition.

6. Claims 33-60 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the

steps. See MPEP § 2172.01. The omitted steps are: how the images are correlated.

Are mathematical calculations done? What is being compared in the correlation?

Examiner interprets correlate to mean to note the linear relationship between two

variables.

Without acquiescing to the rejections, Applicants amend claim 33 as reflected in the Listing of Claims to remove the step, "processing at least two of said sequential images to correlate said at least two sequential images," and to include the steps, "aligning a subset of said plurality of images to compensate for sample motion" and "obtaining spectral data from said sample as a function of location".

Because the terms "correlating" and "correlate" do not appear in the claims as amended, Applicants contend the rejections under 35 USC 112, second paragraph, are rendered moot. Applicants respectfully request the reconsideration and withdrawal of these rejections.

The rejections under 102(b) in light of **Tadrous** are improper

Tadrous does not qualify as prior art under 102(b), since **Tadrous** is not a "printed publication" that was published "more than one year prior to the date of application for patent in the United States". **Tadrous** was published June 27, 2000. The present application is a straight continuation of U.S. Patent Application No. 09/738,614, filed on December 15, 2000, to which the present application properly claims priority (see Preliminary Amendment filed on February 5, 2002). Therefore, Applicants contend the rejections under 102(b) are improper, and respectfully request the withdrawal of those rejections.

Applicants note that to the extent there may be claims that are supported by the specification of U.S. Provisional Patent Application No. 60/170,972, filed on December 15, 1999, **Tadrous** is also not prior art under 102(e) with respect to such claims, since the filing date of the provisional application predates the publication of **Tadrous**.

Nevertheless, independent claim 33 is patentably distinguished from **Tadrous**

Without acquiescing to the rejections, and without making any admission as to the alleged status of **Tadrous** as prior art, Applicants nevertheless contend that the subject matter of independent claim 33 is both novel and non-obvious in light of **Tadrous**.

For example, **Tadrous** does not teach or suggest the step, “aligning a subset of said plurality of images to compensate for sample motion,” as recited in claim 33. The Office action points to **Tadrous** at page 230, paragraph bridging columns, as allegedly teaching, “compensating for relative motion between the sample and a detection device.” However, the cited paragraph of **Tadrous** does not disclose or suggest anything about motion compensation.

The following is the cited paragraph of **Tadrous**:

Several images need be collected for each FL image in order to reduce noise generated by the sensitive imaging system and also for correction of background, etc. There is also a large image processing requirement to calculate the FL image from the phase data. This limits the rate of image frame acquisition to anything from one frame/s at best, to around one frame/hour [4,6].

This paragraph describes collecting images “to reduce noise” and for “correction of background, etc.” This does not disclose or suggest the step, “aligning a subset of said plurality of images to compensate for sample motion,” as recited in claim 33.

Furthermore, **Tadrous** does not teach “obtaining a plurality of sequential images of said sample,” and “obtaining spectral data from said sample,” as recited in claim 33. **Tadrous** appears to only describe one kind of data – “fluorescence lifetime images”. There is no suggestion in **Tadrous**, for example, to use aligned images to correct the spatial location at which spectral data is obtained.

Applicants respectfully request the reconsideration and withdrawal of the rejections of claim 33 under **Tadrous**, at least for the above reasons.

Dependent claims 34, 36-39, 42, 43, 46, 48, 49, 54-56, and 59-70 are patentable in light of **Tadrous**

Claims 34, 36-39, 42, 43, 46, 48, 49, 54-56, and 59-70 each depends directly or indirectly from independent claim 33, and therefore contains all of the limitations of claim 33. Thus, for at least the reasons discussed above with respect to claim 33, **Tadrous** fails to teach or suggest all of the limitations of these dependent claims. Applicants respectfully request the reconsideration and withdrawal of any rejection of any of these dependent claims, at least for this reason.

Claim 49 is patentable over **Tadrous** in view of **Richards-Kortum**.

Without acquiescing to the appropriateness of the use of **Tadrous** in this rejection, Applicants contend that the combination of **Tadrous** and **Richards-Kortum** fails to teach or suggest all of the elements of independent claim 33. Since claim 49 depends from claim 33 and contains all of its limitations, claim 49 is also patentable in light of the combination of **Tadrous** and **Richards-Kortum**.

Applicants respectfully request the reconsideration and withdrawal of the rejection of claim 49, at least for this reason.

Applicants request double patenting rejections be reconsidered and/or held in abeyance

Various claims of the present application are rejected and/or provisionally rejected by the Examiner on the grounds of nonstatutory obviousness-type double patenting. Applicants request that these rejections/provisional rejections be reconsidered and/or held in abeyance in light of the amendment of independent claim 33.

Withdrawn claims 36, 37, and 39 should be reintroduced, and new claims 61-71 added

Applicants contend that withdrawn claims 36, 37, and 39 should be reintroduced in light of the amendment of claim 33. Applicants also contend that new claims 61-70, each of which depends either directly or indirectly from amended claim 33, are properly added. Furthermore, applicants contend new independent claim 71 is properly added, as it recites a system for performing the steps recited in amended claim 33.

The claims are patentably distinguished from **Ko**

The Office action states that **Ko** is made of record and not relied upon, but alleges that **Ko** is considered pertinent to applicant's disclosure. **Ko** appears to disclose a technique for registration of coronary arterial images that involves injection of a contrast agent. Applicants contend that all of the claims of the present application are patentable in light of **Ko**.

CONCLUSION

In view of the foregoing, Applicants respectfully request withdrawal of all rejections and objections, and allowance of claims 33, 34, 36-39, 42, 43, 46, 48, 49, 54-56, and 59-71 in due course. The Examiner is hereby cordially invited to contact Applicants' undersigned representative by telephone at the number listed below to discuss any outstanding issues.

U.S. Ser. No. 10/068,133
Response dated Monday, June 12, 2006
Reply to Office action of March, 10, 2006

Respectfully submitted,

Date: June 12, 2006
Reg. No. 53,002

Tel. No.: (617) 570-1013
Fax No.: (617) 523-1231

A handwritten signature in black ink, appearing to read "William R. Haulbrook". The signature is fluid and cursive, with a horizontal line drawn underneath it.

William R. Haulbrook, Ph.D.
Attorney for Applicants
Goodwin Procter LLP
Exchange Place
Boston, Massachusetts 02109
Customer No. 051414

1705999_1